

S-E-C-R-E-T

CIA/RR GB 64-47 December 1964

SURFACE WIND DATA FOR SPECIFIED FACILITIES IN THE USSR

Summaries of the wind characteristics in the vicinity of 19 specified facilities in the USSR and surface wind data for the nearest meteorological station are given below. Table 1 gives general wind characteristics for each facility. It also indicates which of the supplementary tables (Tables 2 through 16) provides additional data on conditions at the nearest meteorological station. The supplementary tables give available data on average velocities by month or by direction, percentage frequencies of winds from different directions and at different velocities, and frequencies of calms and high winds. In most cases the nearest meteorological station is located not in the immediate vicinity of the facility but at some distance from it. Because of this and because local terrain may modify general wind patterns, the data collected at the station are not always truly representative of wind conditions at the facility. Because some tables include data from more than one source, slight discrepancies appear. Lengths of record for the data in all the tables are unknown. All data have been extracted from various official Soviet publications issued between 1954 and 1963 and are considered to be the most reliable data available.

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GROUP 1

Excluded from automatic downgrading and declassification

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Table 1

General Wind Characteristics at Specified Soviet Facilities

| <u>Facility</u> | General Wind Characteristics | Meteorological Station and Supplementary Table |
|-----------------|---|---|
| 1 | Flow from east or west predominant throughout year with east winds somewhat more frequent; west winds in general have higher velocities. Surface winds average 7-13 miles per hour (mph) with generally higher velocities in spring, fall, and early winter. | Biysk 52 ⁰ 34'N-85015'E Table 2 |
| 2 | East and southeast winds predominant, but winds with westerly components common. Surface winds average 7-12 mph with little seasonal variation. Calms frequent in summer and fall. Strong winds recorded each month but most frequent in winter. Surface winds in summer have higher velocities in afternoon. | Kamensk-Shakhtinskiy 48°21'N-40°19'E Table 3 |
| 3 | Prevailing winds east in winter and west-northwest in summer. Velocities average 8-14 mph with generally higher winds in summer. | El'ton 49º08'N-46º50'E Table 4 |
| | | Verkhniy Baskunchak 48º14'N-46º44'E Table 5 |
| | Prevailing winds in winter south or southwest; winds in summer vary in direction. Strong winds reported each month but most common in December. | Tayga 56 ⁰ 04'N-85 ⁰ 37'E Table 6 |

| | Table 1 (Continued) | Meteorological Station and |
|----------|---|--|
| Facility | General Wind Characteristics | Supplementary Table |
| 5 | Prevailing winds from southeast to west and northwest in winter and from west to north in summer. Velocities average 7-11 mph. Summer winds generally lighter and more variable in direction. | Moscow 55 ⁰ 45'N-37 ⁰ 35'E Table 7 |
| 6, 7 | Surface winds from southwest predominant throughout year. Calms and light winds common all year with surface winds averaging 4-6 mph. Strong winds recorded each month but most frequent in winter and spring. | Krasnoyarsk 56°01'N-92°50'E Table 8 |
| 8 | Prevailing winds in summer generally have northerly component and in winter southerly component; east and west winds common all year. Velocities average 7-12 mph with summer winds generally lighter. Strong winds rare in summer. | Kuybyshev 53°14'N-50°10'E Table 9 |
| 9 | Prevailing winds from west, southwest, and south; secondary winds in summer from north and northwest. Calms and light winds very common. Strong winds recorded each month but most frequent in late spring. | Omsk 54°58'N-73°23'E Table 10 |
| 10, 11 | Predominant wind in winter southwest and in summer west or southwest. Northeast winds common in morning and evening. Surface winds average 6-9 mph with little seasonal variation. | Perm' 58000'N-56015'E Table ll |

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Table 1 (Continued)

| Facility | General Wind Characteristics | Meteorological Station and Supplementary Table |
|------------|--|--|
| 12, 13, 14 | Winds generally variable but most commonly from southeast to northwest in winter and from west to northwest in summer. West winds in midsummer more common in midday than in morning. Surface winds average 8-10 mph with little seasonal variation. High winds infrequent except in spring. | Leningrad 59°55'N-30°15'E Table 12 |
| 15 | Winds from northeast predominant, especially in winter. Winds more variable in summer with winds from south or southwest common. Surface winds average 10-13 mph with little seasonal variation. Diurnal variations pronounced in summer with highest velocities in afternoon. Land breezes blow offshore toward Lake Balkhash at night and sea breezes onshore in late morning and afternoon during spring, summer, and fall. | Balkhash 46°49'N-75°00'E Table 13 |
| 16 | Prevailing winds from southwest in summer and from north and northwest in winter. | No data available |
| 17 | Winds with northerly and easterly components generally predominant in winter; in summer west and northwest winds common. Surface winds average 6-9 mph with little seasonal variation. | Kazalinsk 45°46'N-62°07'E Table 14 Kyz1-Orda 44°48'N-65°28'E Table 15 |

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Table 1 (Continued)

| Facility | General Wind Characteristics | Meteorological Station and Supplementary Table |
|----------|--|--|
| | Prevailing winds in spring from southeast but southwest winds common; reverse pattern in fall. Summer winds generally from north in morning and from southwest in afternoon. Winter winds variable; north or northeast winds probably least frequent. Surface winds average 8-14 mph with higher velocities generally in winter and late spring. | Voronezh 51º38'N-39º12'E Table 16 |
| 19 | Prevailing winds from southeast to west and northwest in winter and from west to north in summer. Velocities average 7-11 mph. Summer winds generally lighter and more variable in direction. | Moscow 55 ⁰ 45'N-37 ⁰ 35'E Table 7 |

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Table 2
Surface Wind Data
BIYSK
(52°34'N-85°15'E)

| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Annual |
|---|------------|-----|-----------------|------------|------|------------|--------|--------------|-----------|------|-------------|-------|------------|
| Average velocity (mph) | 9.6 | 8.7 | 12.1 | 11.4 | 11.2 | 9.4 | 7.8 | 7 . 6 | | 10.3 | 12.7 | 11.2 | 10.1 |
| Average number of days with wind velocity >33.5 mph | 1.6 | 1.5 | 1. ⁴ | 1.3 | 1.8 | 2.2 | 1.0 | 1.5 | 1.9 | 2.9 | 1.9 | 3.0 | 22.0 |
| | North | Nor | theast | Eas | t Sc | utheas | t So | uth | Southw | est | West | North | nwest |
| Average velocity (mph) | | | | | | | | | | | | | |
| January July | 4.0 6.9 | | 7.4 6.9 | 7.2 6.9 | | 6.3 6.7 | | •3 •7 | 12. 8. | | 13.6 7.6 | , | 7.8 5.5 |
| Average frequency (percent) | | | | | | | | | | | | | |
| January July | 6 9 | | .4 .4 | 29 20 | | 10 13 | 3 7 | , | 14 14 | | 19 13 | 10 | |
| | | | | | | | | | | | | | |

Average number of calms:

January 13 July 13

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Table 3
Surface Wind Data
KAMENSK-SHAKHTINSKIY
(48021'N-40019'E)

| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Annual |
|---|--------------------------------------|--------------------------------------|---|---------------------------------------|---|---------------------------------------|---|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| Average velocity (mph) | 10.5 | 12.1 | 12.1 | 10.7 | 9.6 | 8.7 | 7.6 | 8.3 | 9.4 | 10.1 | 11.4 | 11.6 | 10.3 |
| Average frequency (percent) | | | | | | | | | | | | | |
| North Northeast East Southeast South Southwest West Northwest | 5 12 23 13 6 14 18 | 4 11 26 19 8 13 13 | 6 10 25 20 8 14 11 6 | 7 10 22 18 11 15 11 | 7 9 22 15 10 14 14 9 | 6 10 15 11 10 17 19 | 7 8 14 11 8 16 22 14 | 6 8 20 12 6 13 21 | 7 9 24 18 7 13 14 | 4 8 32 16 6 13 13 | 4 8 28 19 7 14 13 | 4 9 26 17 7 13 17 | 5 9 23 16 8 14 15 |

Average number of calms:

| January | 5 | July | 7 |
|----------|---|-----------|----|
| February | 4 | August | 12 |
| March | 5 | September | 13 |
| April | 7 | October | 11 |
| May | 7 | November | 9 |
| June | 8 | December | 4 |

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Table 4
Surface Wind Data
EL'TON
(4908'N-46050'E)

| | North | Northeast | East | Southeast | South | Southwest | West | Northwest | Total |
|---|------------------------|---------------------------------|----------------------------------|-------------|--------------------------|--------------------------|-------------------------------|--------------|----------------------------|
| Average velocity (mph) | | | | | (| | 11.0 | 9 . 2 | N.A. |
| January July | 10.1 | 13.2 9.6 | 14.1 9.6 | 13.0 9.6 | 11.6 8.9 | 11.2 9.2 | 9.6 | 8.9 | N.A. |
| Average frequency (percent) | | | | | | | 77 | 8 | N.A. |
| January July | 6 14 | 14 13 | 23 11 | 17 9 | 9 7 | 12 12 | 11 17 | 17 | N.A. |
| Average frequency of | (percent | t) | | | | | | | |
| velocity ranges | (mph) | | Ja | anuary | | | | 0:0 | 13.5 |
| 0-4.5 4.5-13.4 13.4-24.6 24.6-33.6 33.6 | 1.8 3.8 1.3 0 | 1.4 6.0 5.6 0.4 0.1 | 1.7 10.2 9.6 1.4 0.1 | 5.7 0.3 | 1.4 4.5 2.5 0.2 | 1.8 5.9 3.5 0.2 | 1.7 6.6 3.2 0.5 0 | 4.7 1.7 | 50.0 50.1 3.0 0.4 |
| | | | | July | | | | 1. 7 | 16.7 |
| 0-4.5 4.5-13.4 13.4-24.6 24.6-33.6 33.6 | 1.7 9.8 1.2 0 | 2.2 9.9 2.6 0.1 | 1.7 7.0 2.1 0 | 4.4 | 1.2 4.1 0.8 0.1 | 1.7 7.9 2.4 0 | 2.7 11.9 3.4 0.1 | 11.7 | 66.7 16.1 0.5 0 |

Average number of calms:

January 4 July 3

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Table 5

Surface Wind Data
VERKHNIY-BASKUNCHAK
(48014'N-46044'E)

| | North | Northeast | East | Southeast | South | Southwest | West | Northwest |
|--|--------------|-----------|----------|-----------|---------|-----------|----------|-----------|
| Average frequent (percent) January July | 7 10 | 12 | 22 12 | 12 7 | 10 9 | 13 13 | 16 23 | 8 16 |
| | Average velo | | | | | | | |

Average number of calms:

January 1 July 2

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Table 6
Surface Wind Data
TAYGA
(56°04'N-85°37'E)

| | North | Northeast | East | Southeast | South | Southwest | West | Northwest |
|-----------------------------|------------|------------|------------|------------------------------|-------------|-------------|------------|------------|
| Average velocity (mph) | | | | | | | | |
| January July | 3.6 5.6 | 5.4 7.6 | 4.0 7.2 | 6 . 5 6 . 9 | 12.1 7.6 | 13.9 8.3 | 7.6 6.5 | 3.2 5.8 |
| Average frequency (percent) | | | | | | | | |
| January July | 2 11 | 9 19 | 1 5 | 6 10 | 39 18 | 38 19 | 4 9 | 1 9 |

Average number of calms:

January 9 July 16

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Table 7
Surface Wind Data
MOSCOW
(55°45'N-37°35'E)

| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | 0ct | Nov | Dec | Annual |
|---|---|--|-------------------------------------|--------------------------------------|---------------------------------------|--------------------------------------|--|--------------------------------------|-------------------------------------|---|-------------------------------------|-------------------------------------|--------------------------------------|
| Average velocity (mph) | 10.3 | 10.3 | 10.5 | 9.6 | 9.2 | 7.8 | 7.2 | 7.4 | 8.7 | 9.6 | 10.3 | 9.8 | 9.2 |
| Average number of days with wind velocity > 33.5 mph | 1.9 | 2.0 | 1.9 | 1,7 | 1.8 | 1.4 | 1.0 | 0.9 | 1.5 | 1.6 | 2.1 | 1.7 | 19.5 |
| Average frequency (percent) | | | | | | | | | | | | | |
| North Northeast East Southeast South South Southwest West Northwest | 8 4 7 16 14 17 20 14 | 10 5 7 18 15 15 16 14 | 9 6 7 14 15 16 20 | 11 8 8 18 17 14 12 | 16 12 9 12 11 12 13 | 15 9 8 10 10 14 15 | 18 10 11 8 7 11 15 20 | 13 6 10 12 9 14 17 | 9 5 4 10 15 19 21 | 7 5 5 14 17 19 20 13 | 7 5 5 15 19 20 17 | 7 6 6 17 19 16 17 | 11 7 7 14 14 15 17 |
| | Nort | h <u>Nor</u> | theast | East | Sout | heast | South | Sout | hwest | West | North | west | <u>Total</u> |
| Average velocity (mph) | - 1 - | | 0 0 | 10.7 | | 12.1 | 10.3 | ۵ | .8 | 10.7 | 1½. | l | N. A. |
| January July | 14.3 9.8 | | 9.8 6.9 | 10.1 8.5 | | 8.5 | 8.1 | | .4 | 7.4 | 10. | | N.A. |

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Table 7 (Continued)

| | | | | (00222 = m+ | South | Southwest | West | Northwest | Total |
|---|---------------------------------|------------------------|--------------------------|----------------|---------------------------------|----------------------------------|--------------------------|-------------------------------|------------------------------------|
| | North | Northeast | East | Southeast | DO 01.011 | | | | |
| Average frequency | (percer | rt) | | | | | | | |
| of velocity ranges | | | | | | | | | |
| | | | J: | anuary | | | | 0.5 | 24.8 |
| 0-4.5 4.5-13.4 13.4-24.6 24.6-33.6 33.6 | 2.3 5.1 1.1 0.1 0.1 | 1.8 4.0 0.3 0 | 2.0 4.8 1.3 0.1 | 7.9 3.1 | 4.0 8.3 4.0 0.6 0.2 | 4.4 11.4 2.6 0.2 0.2 | 3.1 7.4 1.9 0.1 | 2.5 6.9 2.5 0.3 0 | 55.8 16.8 1.7 0.9 |
| | | | | July | | | | | |
| 0-4.5 4.5-13.4 13.4-24.6 24.6-33.6 33.6 | 6.3 9.0 2.7 0.1 | 4.1 5.6 1.1 0 | 3. 5. 0. 0 | 7 5.6 9 0.9 | 1.4 4.7 0.7 0 | 3.0 6.5 0.5 0 | 10.0 1.1 0 | 10.2 | 30.9 57.3 11.3 0.4 0.1 |

Table 8
Surface Wind Data
KRASNOYARSK
(56°01'N-92°50'E)

| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Annual |
|---|--|------------------------------------|---|------------------------------------|---|---------------------------------|------------------------------------|--|--|--|--|------------------------------------|------------------------------------|
| Average velocity (mph) | 5.6 | 4.0 | 5.4 | 6.0 | 6.0 | 4.7 | 3.8 | 3.8 | 4.9 | 5.6 | 6.3 | 5.1 | 5.1 |
| Average number of days with wind velocity >33.5 mph | 1.8 | 0.9 | 1.5 | 1.3 | 1.6 | 0.7 | 0.7 | 0.5 | 0.6 | 1.3 | 1.8 | 1.8 | 14.5 |
| Average frequency (percent) | | | | | | | | | | | | | |
| North Northeast East Southeast South South West Northwest | 1 2 4 2 4 48 30 9 | 2 3 2 4 38 24 24 | 2 3 5 3 4 41 28 14 | 2 8 4 3 42 28 11 | 2 3 6 3 5 46 24 11 | 3 12 5 6 40 21 | 2 4 12 7 7 39 18 | 2 3 9 5 7 42 23 9 | 2 3 6 3 4 50 25 7 | 1 3 4 2 6 46 29 9 | 1 3 3 3 3 51 27 9 | 2 4 3 2 45 28 14 | 2 7 3 4 44 26 11 |
| Average number of calms | 19 | 20 | 18 | 12 | 11 | 10 | 17 | 20 | 16 | 15 | 13 | 23 | 194 |
| Average frequency of velocity ranges | (perce | nt) | | | | | | | | | | | |
| 0-4.5 4.5-13.4 13.4-24.6 24.6-33.6 33.6 | 57.3 32.3 8.4 1.7 0.3 | 68.0 27.5 4.2 0.3 | 57.0 35.4 6.8 0.8 | 47.2 43.3 8.8 0.5 0.2 | 47.7 44.8 6.7 0.7 0.1 | 56.9 40.3 2.7 0.1 0 | 65.8 33.1 1.1 0 | 64.1 34.9 1.0 0 | 53.1 42.6 3.9 0.3 0.1 | 50.3 42.5 6.8 0.4 0 | 48.9 40.5 9.0 1.0 0.6 | 58.8 29.6 10.9 0.5 0.2 | |

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Table 9
Surface Wind Data
KUYBYSHEV
(53°14'N-50°10'E)

| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Annual |
|---|---------------------------------------|-------------------------------------|--------------------------------------|---|-------------------------------------|--------------------------------------|---|---|--------------------------------------|--|---------------------------------------|--|--------------------------------------|
| Average velocity (mph) | 10.7 | 11.6 | 11.9 | 10.5 | 10.1 | 8.9 | 7.8 | 8.1 | 8.7 | 10.3 | 10.3 | 11.0 | 10.1 |
| Average frequency (percent) | | | | | | | | | | | | | |
| North Northeast East Southeast South South West Northwest | 10 6 21 15 13 16 12 | 9 6 25 16 9 18 10 | 8 5 16 11 14 23 16 | 12 9 15 9 12 20 14 9 | 14 9 12 8 7 17 18 | 17 14 12 6 4 14 19 | 21 1 ¹ 4 12 5 3 9 18 | 18 16 19 7 3 7 14 16 | 15 7 11 9 10 16 17 | 10 7 13 7 11 17 21 14 | 12 5 17 12 10 18 17 | 10 4 20 11 12 21 14 8 | 13 8 16 10 9 16 16 |

Average number of calms:

| January | 5 | July | 8 |
|----------|---|-----------|---|
| February | 4 | August | 8 |
| March | 3 | September | 6 |
| April | 3 | October | 5 |
| May | 4 | November | 6 |
| June | 4 | December | 4 |

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Table 10

Surface Wind Data OMSK (54°58'N-73°23'E)

| | | | ` | <i>J</i> • <i>J</i> • | 17 | / -/ | | | | | | | |
|---|--|---|--|------------------------------------|-------------------------------------|--|--|--------------------------------------|--|------------------------------------|--|-------------------------------------|------------------------------------|
| * | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | 0ct | Nov | Dec | Annual |
| Average frequency (percent) | | | | | | | | | | | | | |
| North Northeast East Southeast South South West Northwest | 5 4 8 10 19 27 20 7 | 4 5 11 10 22 22 22 20 6 | 6 10 8 19 24 20 | 9 5 7 15 21 23 | 12 6 7 8 16 17 19 | 16 9 5 9 14 11 20 16 | 16 10 9 8 13 11 17 16 | 16 6 8 14 13 22 15 | 8 5 6 8 19 18 24 12 | 7 3 6 20 23 27 | 5 3 5 8 20 27 22 10 | 4 8 10 19 25 22 8 | 9 6 7 8 17 21 21 |
| Average frequency of velocity ranges | (perce | nt) | | | | | | | | | | | |
| 0-4.5 4.5-13.4 13.4-24.6 24.6-33.6 33.6 | 52.4 38.2 7.4 1.4 0.6 | 52.4 36.3 8.0 2.0 1.2 | 55.9 34.0 8.3 1.0 0.8 | 47.6 38.1 11.4 1.7 1.2 | 43.5 39.2 13.2 2.5 1.6 | 48.0 40.2 9.5 1.6 0.7 | 49.0 40.0 9.6 0.8 0.6 | 45.9 43.8 9.0 0.6 0.7 | 47.3 40.1 10.4 1.6 0.7 | 41.4 42.0 14.0 1.5 1.1 | 42.6 41.6 12.2 2.8 0.8 | 48.4 39.7 9.8 1.3 0.8 | |
| Average number of days with wind velocity >33.5 mph | 1.3 | 1.3 | 2.9 | 2,0 | 2,9 | 2.0 | 1.0 | 1.5 | 1.4 | 1.7 | 2.2 | 1.9 | 22.1 |
| | | F M A M | Avera anuary ebruar arch arch april ay une | 11 | Jul Aug Sep Oct Nov | calms y y y ust otember cober rember ember | 15 15 | | | | | | |

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Table 11
Surface Wind Data
PERM'

(58°00'N-56°15'E)

| | Jan Feb Mar | Apr May | Jun Jul | Aug Se | p Oct No | v <u>Dec</u> A | <u>Innual</u> |
|--|------------------------------------|------------------------------------|---------------|---------------------------------|------------------------------------|----------------|------------------------------------|
| Average velocity (mph) | 8.5 7.4 8.7 | 7.8 8.3 | 6.7 5.8 | 6.3 7. | 2 8.9 8. | 7 8.3 | 7.6 |
| Average number of days with wind velocities >33.5 mph | 0.3 0.7 0.5 | 0.4 1.7 | 0.9 0.9 | 0.7 0. | 9 0.5 0. | 8 0.5 | 8.8 |
| - 33.77 - 1 | North Northe | east East | Southeast | South | Southwest | West No | orthwest |
| Average velocity (mph) | | | | | 70.7 | o g | 6 . 0 |
| January July | 4.7 5.8 5.6 5.6 | 7.4 5.8 | 8.3 6.7 | 10.5 6.0 | 10.7 7.4 | 9.8 7.2 | 6.3 |
| Average frequency (percent) | | | 7.0 | 7 h | 24 | 17 | 6 |
| Annual January July | 7 10 4 9 14 13 | 10 10 11 | 12 14 9 | 14 16 10 | 29 16 | 15 18 | 6 3 9 |
| Average frequency (percent) of velocity ranges (mph) | Dec-Feb | Mar-May | | -Aug | Sep-Nov | | Annual |
| 0-4.5 4.5-13.4 13.4-24.6 24.6-33.6 33.6 | 28.4 50.9 17.9 1.9 0.9 | 28.3 50.2 18.4 2.4 0.7 | 5 1 | 7.8 1.1 0.2 0.7 0.2 | 26.1 52.9 18.7 1.7 0.6 | | 30.1 51.3 16.3 1.7 0.6 |

Average number of calms:

January 6 July 11

Average number of calms during a year: 80

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Table 12
Surface Wind Data
LENINGRAD
(59°55'N-30°15'E)

| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Annual |
|--|-------------------------------------|--------------------------------|--|---|-------------------------------------|---|------------------------------------|---|-------------------------------------|-------------------------------------|--------------------------------|-------------------------------------|--------------------------------------|
| Average velocity (mph) | 10.7 | 10.3 | 10.1 | 9.4 | 9.2 | 9.2 | 8.7 | 8.9 | 9.8 | 10.3 | 10.7 | 10.5 | 9.8 |
| Average frequency (percent) North Northeast East Southeast South South Southwest West Northwest | 3 6 8 18 18 16 18 | 5 8 17 17 14 18 | 5 10 9 17 13 14 18 14 | 5 14 12 15 13 12 16 13 | 6 14 12 10 9 9 21 | 8 1 ¹ 4 10 9 8 10 23 18 | 7 17 12 9 8 9 21 | 8 11 10 13 11 14 18 15 | 8 7 7 13 14 16 18 | 5 6 8 16 20 18 13 | 5 8 17 18 18 13 | 4 6 9 19 18 16 13 | 6 10 9 15 14 14 17 |
| | North | n <u>Nor</u> | theast | East | Sout! | heast | South | Sout! | nwest | West | North | west | |
| Average velocity (mph) | | | | | | | | | | | 0 | | |
| January July | 8.5 8.5 | | 7.8 8.7 | 9.8 8.7 | | 1.6 9.2 | 11.4 8.5 | 10 8 | •3 •9 | 10.1 9.4 | 8. 7. | 3 8 | |

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Table 13
Surface Wind Data
BALKHASH
(46049'N-75000'E)

| | | | (40 | マクハ | 12 | | | | Con | Oct | Nov | Dec A | nnua |
|---|-------------|------|--------------|----------|--------|--------------------|-------|------------|-------------|------|-------------|--------|---------------|
| | Jan | Feb | Mar | Apr | May | Jun | Ju⊥ | Aug | Sep | | | | |
| | | | | | 77 6 | 77 0 | 10.5 | 10.7 | 10.3 | 10.1 | 10.7 | 11.0 | 11.2 |
| Average velocity (mph) | 12.7 | 12.5 | 11.6 | 11.2 | 11.6 | 11.0 | 10.7 | | | | | 0 | |
| Average number of days with wind velocities 33.5 mph | 1.0 | 1.0 | 1.0 | 1.0 | 2.0 | 2,0 | 0.8 | | 1.0 | 0.9 | 0.8 | 0.8 | 14.3 |
| →),, mg | North | Nor | theast | Eas | st So | outheas | st So | outh | Southw | rest | West | MOLGII | weso |
| Average velocity (mph) | 8.7 | | 12.7 | 11 | | 6.7 11.2 | | 5.8 2.1 | 8.5 12.5 | | 8.3 13.2 | 12 | |
| July Annual | 10.1 9.8 | | 12.1 12.5 | 12 11 | | 8.9 | | 8.7 | 11.2 | 2 | 12.3 | 10 | 1.5 |
| Average frequency (per at 0100 and 1300 hor | cent) rs | | | | | | | | | | | | |
| | | | | Jan | uary | | | | _ | | _ | - | , |
| 0100 1300 | <u>)</u> + | | 71 57 | 18 | | 0 • 1 4 | - | 3 2 | 6 7 | | 5 7 | 3 | L |
| 2000 | | | | Ar | oril | | | | | | | | |
| 0100 | 10 2 | | 49 15 | 11 | | 1 19 | : | 2 18 | 9 22 | | 8 5 | | 7 <u>}</u> |
| 1,000 | | | | J٦ | uly | | | | | | | | |
| 0100 1300 | 19 4 | | 44 5 | 1 | 6 4 | 1 15 | | 2 41 | 6 19 | | 7 8 | 1 | 5 4 |
| 1,00 | | | | 0c | tober | | | | | | | | |
| 0100 1300 | 14 2 | | 42 17 | 1 | 7 4 | 3 17 | | 3 18 | 8 20 | | 14 8 | | 9 |

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Table 13 (Continued)

| | | Table l | 3 (Cont | inusa/ | | Southwest | West | Northwest |
|---------------------------------------|------------------|----------------|---------------|-------------|--------------|---------------|-------------|--------------|
| | North | Northeast | East | Southeast | South | BOULTIMEST | | |
| Average frequency January July Annual | (percent) 3 10 7 | 66 22 42 | 12 8 11 | 2 8 5 | 2 18 8 | 6 16 12 | 6 7 8 | 7 11 7 |

| Average velocity (mph) | Average frequency (percent) | |
|--|---|--|
| 0 | 100 86.5 63.6 37.7 18.5 9.3 4.5 | |
| 4.5 8.9 13.4 17.9 22.4 26.8 31.3 35.8 | 9.3 4.5 1.7 0.8 0.2 | |
| 35.8 40.3 44.7 53.7 | 0.1 | |

Average number of calms:

January 4 July 4

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Table 14

Surface Wind Data KAZALINSK (45°46'N-62°07'E)

| | | | (45° | :46, N- | 25001 | E-) | | | ~ | Oct | Nov | Dec Annua | al |
|---|--------------------|---|-------------------|-------------|--------|-------------------|---------------|--|--------------|----------------|-------------------|-------------------|----|
| | Jari | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | | 6.9 | 8.1 7.2 | |
| Average velocity (mph) | | 7.6 | 8.5 | 8.5 | 8.1 | 6.9 | 6.3 | 5.8 | 6.0 | 6.7 | 6.9 | | |
| Average number of days with wind velocities | | 2.0 | 2.0 | 3.0 | 1.0 | 0.9 | 0.9 | 0.4 | 0.5 | 1.0 | 0.7 | 1.0 14.1 | |
| >33.5 mph | North | No | theast | Eas | st So | outheas | t So | outh | South | vest | West | Northwest | - |
| Average velocity (mph) January July Annual | 6.5 6.0 6.9 | | 6.7 6.3 7.4 | 7 5 7 | .4 | 6.3 5.1 6.5 | | 0.7 5.8 8.5 | 11 8 9 | .6 .3 .6 | 8.9 7.8 8.5 | 4.9 6.7 6.5 | |
| Average frequency (per January | rcent) 11 18 | | 28 13 | 19 |) 3 | 11 4 | | -0 3 | 9 13 |) | 7 20 | 5 21 | |
| July | | age ve (mph | elocity | - | | A - | verage (pe | ercent | uency) | | | | |
| | | 0 4.5 8.9 13.4 17.9 22.4 26.8 31.3 | 3 | | | | | 100 68.9 31.2 14.0 6.3 3.4 2.4 1.6 0.6 | | | | | |
| | _ | 40. | 3 | | mbon o | f calma | 3: | | | | | | |

Average number of calms:

January 3

July 4

- 19
S-E-C-R-E-T

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Table 15
Surface Wind Data
KYZL-ORDA
(44048'N-65028'E)

| | | | (440 | 748 . M-0 | 05°20 . | <u> </u> | | | | | | ~ | Annual |
|---|-------------------|-------|-------------------|-------------------|-------------|------------|------|------------|----------|------|------------|------|------------------|
| | | | | | | Jun | Jul | Aug | Sep | Oct | Nov | Dec | |
| | Jan | Fe'b | Mar | \underline{Apr} | May | | | 6.0 | 6.3 | 6.5 | 6.9 | 7.8 | 7.2 |
| Average velocity (mph) | 7.6 | 8.7 | 8.3 | 8.3 | 7.2 | 6.3 | 5.8 | 0.0 | 0.7 | | | 0.7 | 5 . 4 |
| Average number of days with wind velocities | | 0.7 | 1.0 | 0.7 | 0.5 | 0.4 | 0.1 | 0 | 0.3 | 0.4 | 0.5 | 0.3 | J• ** |
| >33.5 mph | NT h | , Mai | theast | ; Eas | st <u>S</u> | outheas | st S | outh | South | vest | West | Nort | hwest |
| | North | 1101 | . 0:10 0.2 | | _ | | | | | | | | |
| Average velocity (mph) | | | 0 1 | 7 | .2 | 5.6 | | 6.5 | 8. | | 7.6 6.9 | | 5.8 7.4 |
| January July Annual | 6.5 6.7 5.8 | | 9.4 6.9 8.7 | 8 | 5.1 3.1 | 7.4 5.8 | | 4.2 6.5 | 7. 8. | 3 | 7.2 | | 6.3 |
| Average frequency (percent) | | | | 7 | z | 9 | | 9 | 14 | | 4 | | 14 214 |
| January July | 10 26 | | 37 22 | 1 | 9 | 9 3 | | 9 2 | <u></u> | | 10 | | |

Average number of calms:

January 8 July 17

- 20 -

S-E-C-R-E-T

Table 16
Surface Wind Data
VORONEZH
(51°38'N-39°12'E)

| | Jan | Feb Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Annual |
|--|---------------------------|---------------------------|---------------------------------|---------------|------------------------|---------------------------------|-------------|----------------------|---------------------------------|----------------------|---------------|------------------------------------|
| Average velocity (mph) | | 12.5 11.4 | 11.4 | 11.0 | 9.2 | 8.5 | 8.3 | 9.4 | 11.6 | 11.9 | 12.1 | 11.0 |
| WACTORS LOTO 1-10 (FT.) | North | Northeast | East | South | east | South | Southw | rest | West | Northwe | est | <u>Total</u> |
| Average velocity (mph) | - | | | | | | | | | | _ | |
| January July | 11.6 7.6 | 9.4 7.6 | 10.3 6.9 | 11 6 | .2 .5 | 13.0 8.3 | 14. 10. | | 14.8 10.7 | 15.0 10.1 | | N.A. N.A. |
| Average frequency (per | cent) | | | | | | | | | 7.0 | | N.A. |
| January July | 7 15 | 8 13 | 21 10 | 14 6 | | 12 9 | 13 10 | | 13 17 | 12 20 | | N.A. |
| Average frequency (percent) of velocity ranges (mph) | | | Janı | ıary | | | | | | | | |
| 0-4.5 4.5-13.4 13.4-24.6 24.6-33.6 33.6 | 1.4 6.9 2.9 0.2 | 1.6 7.8 2.3 0 | 1.0 6.7 3.8 0.2 0.1 | [] [] | 7.6 4.8 0.7 | 1.0 6.1 4.8 0.5 0.1 | 6 5 0 | .2 .7 .1 .7 | 1.2 6.9 5.0 0.4 0.1 | 1. 5. 3. 0. | 14 14 | 10.2 54.1 32.1 3.2 0.4 |
| | | | Ju | • | _ | | _ | 7 | 7 7 | z | z | 23.5 |
| 0-4.5 4.5-13.4 13.4-24.6 24.6-33.6 33.6 | 4.1 11.2 3.5 0.3 | 3.0 10.7 1.8 0.1 | 2.3 6.1 0.9 0 | <u>)</u> (| 2.6 +.2 0.6 0 | 2.2 3.1 0.9 0 | 5 1 | .3 .2 .2 .2 | 3.7 8.3 3.5 0.5 0.1 | 3. 9. 4. 0. | 7 .0 .3 | 58.5 16.4 1.4 0.2 |

Average number of calms:

January 3 July 4

- 21 -

28 October 196h late:

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Ch/GG/8 PROM:

SUBJECT: Research Activity Notice

SUBJECT: Wind Data

PROBLEM: To provide wind data (directions, velocities) for 17 specified

points in the USSR.

Life Sciences/ORD/DDS&T EQUESTER:

25X1A 00/8 AMALYST:

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